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SCHREIBER GRANA & YONLEY INCORPORATED
ENVIRONMENTAL ENGINEERS

271 Wolfner Drive ▪ Saint Louis, Missouri 63026
314/349-8399 ▪ Fax 314/349-8384

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

July 1, 1994

Mr. Ruben McCullers
Environmental Scientist
U.S. EPA, Region VII
WSTM/RCRA/RCOM
726 Minnesota Avenue
Kansas City, Kansas 66101

Dear Mr. McCullers:

On behalf of The Knapheide Mfg. Co., Schreiber, Grana & Yonley, Inc. is pleased to submit this revised closure plan for the waste paint filters and over spray paper storage unit and the Brule incinerator unit at The Knapheide Mfg. Co.'s, West Quincy, Missouri facility.

The preparation of this plan was in accordance with the interim status closure requirements specified in 40 CFR 265, Subpart G and also addressed preliminary comments submitted by the Missouri Department of Natural Resources on March 15, 1994. Pursuant to the Mississippi River flooding experienced during the summer of 1993, flood waters inundated the facility such that the condition of the regulated units may have been altered. As such, additional sampling procedures are outlined for the purpose of assessing the condition of the Brule incinerator unit and for establishing background soil constituent concentrations. This revised plan includes provisions for collecting wipe samples from the Brule incinerator area in order that the unit and the associated concrete pad may be effectively characterized for disposal.

Since MDNR has primacy & per discussion with Paula, this document was not reviewed RBM 7/21/94

If you have any questions regarding any of the material presented, please contact Suzanne M. Riney, P.E. of my staff at (314) 349-8399. We appreciate your time and cooperation in this matter and look forward to a timely approval.

Sincerely,

Robert J. Schreiber, Jr., P.E.
President

RJS/sr/bkh

Enclosure

cc: Sandra L. Oberkfell; Rudnick & Wolfe
Steve Jakes; MDNR
Gary Korb; The Knapheide Mfg. Co.

knap07/closure.ltr

CLOSURE PLAN
FOR
WASTE PAINT FILTERS AND
OVER SPRAY PAPER STORAGE UNIT
AND THE
BRULE INCINERATOR UNIT

Revised
July 1, 1994

PREPARED FOR:

THE KNAPHEIDE MFG. CO.
WEST QUINCY, MISSOURI

PREPARED BY:

SCHREIBER, GRANA & YONLEY, INC.
ST. LOUIS, MISSOURI

SUBMITTED TO:

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION VII
KANSAS CITY, KANSAS

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CLOSURE PLAN
FOR
WASTE PAINT FILTERS AND OVER SPRAY PAPER STORAGE UNIT
AND THE
BRULE INCINERATOR UNIT

1.0 INTRODUCTION

1.1 Purpose

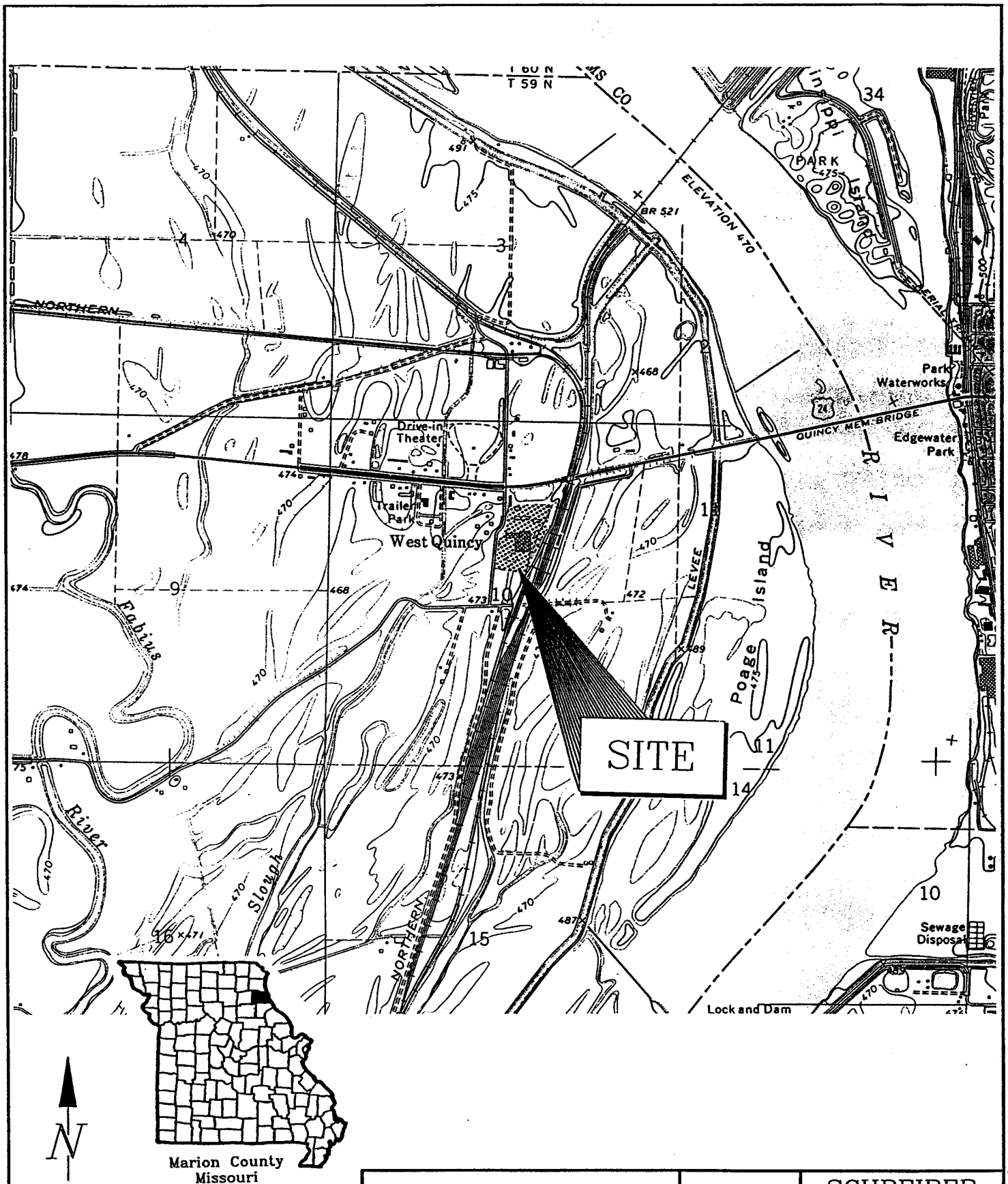
In June, 1993 a closure plan was prepared and submitted to address the "waste paint filter and over spray paper storage unit" and the "Brule incinerator unit". These units were referred to in the consolidated consent agreement and consent order between the U.S. Environmental Protection Agency (EPA) and The Knapheide Manufacturing Co. (Knapheide) (Docket Nos. V11-92-H-0008, V11-93-T-499-E); herein after referred to as "Consent Order".

Pursuant to this plan, Knapheide has elected to revise the closure plan in lieu of the Mississippi River flooding experienced during the summer of 1993. Flood waters inundated the facility such that the condition of the regulated units may be altered. As such, additional sampling procedures are outlined for the purpose of assessing the condition of the Brule incinerator unit and for establishing background soil constituent concentrations. Also included in this revised closure plan are preliminary comments generated by the Missouri Department of Natural Resources (MDNR) in March, 1993.

1.2 Background

Knapheide assembles custom truck body parts at its facility located in West Quincy, Missouri (Figure 1). The West Quincy facility operation includes the painting of assembled products.

The EPA, Region VII, alleged in a Resource Conservation and Recovery Act (RCRA) Compliance Complaint that waste paint filters and over spray paper generated by the painting operation are characteristically hazardous due to leachable chromium toxicity. The facility was cited in that complaint in part, for treatment of these hazardous wastes and storage of these hazardous wastes over 90 days without a permit. Pursuant to a Consent Order in settlement of said alleged violation, Knapheide must close the alleged waste paint filter and over spray paper storage unit in accordance with interim status rules as approved by the MDNR. In addition, the Consent Order requires that an inoperative Brule incinerator be similarly closed as a treatment unit for waste paint filters and over spray paper.



Source: Quincy West Quadrangle
Illinois–Missouri
7.5 Minute Series (Topographic)

VICINITY MAP

KNAPHEIDE MANUFACTURING COMPANY
WEST QUINCY, MISSOURI

FIGURE 1

SCALE: 1" =2000'

DWG.# KNAP06-3

SCHREIBER & GRANA YONLEY INCORPORATED
ENVIRONMENTAL ENGINEERS

The wastestream referred to in the EPA complaint is waste paint filters and over spray paper (hereinafter referred to as used absorbent material) used to collect paint residues (see Appendix A for absorbent material analytical results). Used absorbent material was handled and stored at the subject closure area in sealed 55-gallon metal containers. Between 1980 and September 25, 1989, the used absorbent material was disposed of in the small on-site Brule incinerator. No other materials were disposed of in the incinerator. The ash generated by the incineration activities was collected and stored at the storage area.

The purpose of this Closure Plan is to comply with the Consent Order to provide a Closure Plan in accordance with 40 CFR 265 Subparts G and O for the subject closure area. This Closure Plan describes the steps necessary to completely close the interim status storage and treatment unit referenced in the Consent Order as being located at Knapheide's West Quincy facility. For purposes of this Closure Plan, the subject closure area will be divided into two (2) units:

1) Waste Paint Filters and Over Spray Paper Storage Unit; and
2) Brule Incinerator Unit

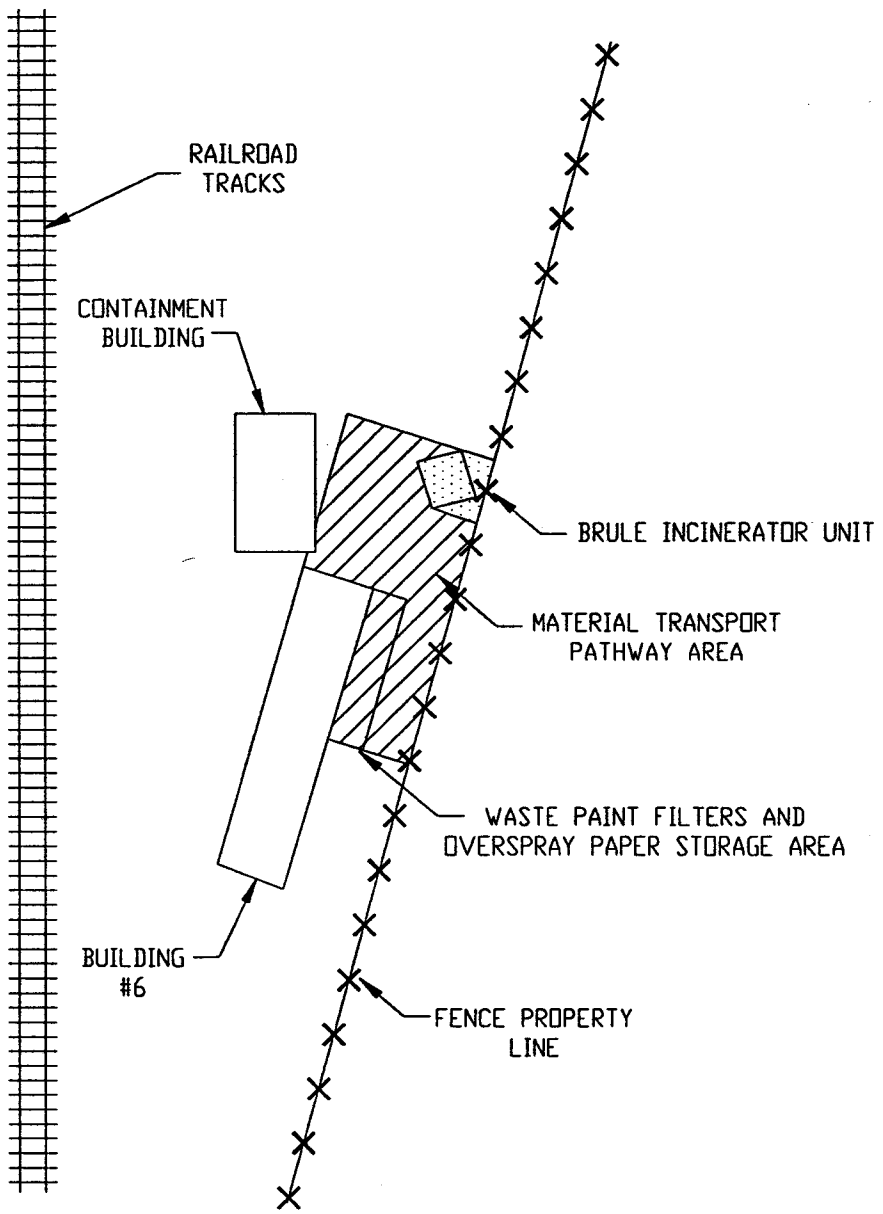
This Closure Plan will be amended if unexpected events occur during the implementation of the plan which would require a modification after it is approved by the EPA. Such an amendment will be submitted to the EPA within 30 days after the unexpected event has occurred per 40 CFR §265.112 (C)(2). As requested by the MDNR, Knapheide will notify the EPA and MDNR 45 days prior to the start of closure activities. MDNR and EPA will be notified 15 days prior to performing the sampling activities.

Knapheide will maintain at its facility the approved Closure Plan (including closure schedule) and will complete the closure within 180 days following the final plan approval by the EPA. Within 60 days of the completion of closure activities, a closure certification meeting the requirements of 40 CFR §265.115, will be provided to the EPA by registered mail.

2.0 WASTE PAINT FILTERS AND OVER SPRAY PAPER STORAGE UNIT

The area that comprises the former "waste paint filters and over spray paper storage unit" is not visually evident by current site conditions. The maximum extent of storage of used absorbent material containers extends from the incinerator southward along the eastern exterior wall of Building No. 6, approximately 66 feet south from the northeast corner of the building, and east to the fence line (see Figure 2).

Activities that were conducted at the waste paint filters and over spray paper storage unit consisted solely of the storage of used absorbent material and incinerator ash within sealed 55-gallon metal containers between 1980 and May 24, 1991. Storage activities involved moving full containers from satellite storage areas throughout the facility by forklift to the storage area for staging prior to incineration. Subsequently, ash from the incinerator operation was also contained and stored in the paint filter and over spray paper storage unit area prior to being shipped off-site.



APPROXIMATE SCALE:
0' 25' 50'

CLOSURE UNITS LOCATION DIAGRAM KNAPHEIDE MANUFACTURING COMPANY WEST QUINCY, MISSOURI	FIGURE 2 DATE: 5-3-94 DWG.# KNAP06-2	SCHREIBER GRANA & YONLEY INCORPORATED ENVIRONMENTAL ENGINEERS

Currently, the used absorbent material is stored in a less than 90 day storage area which is separate from the subject closure area. The facility retains Chief Supply of Haskell, Oklahoma to transport and dispose of the used absorbent material (EPA Designation No. D001, D007). Chief Supply blends the used absorbent material with other combustible fuels and redistributes it as an energy recovery fuel at an appropriate permitted treatment, storage or disposal facility.

2.1 Maximum Inventory

Based on information provided by facility personnel, the maximum inventory of containers ever stored in the waste paint filter and over spray paper storage unit was 958, 55-gallon metal containers. Of that amount, it is estimated that 888 containers held absorbent material while 70 containers held incinerator ash.

2.2 Closure Procedures

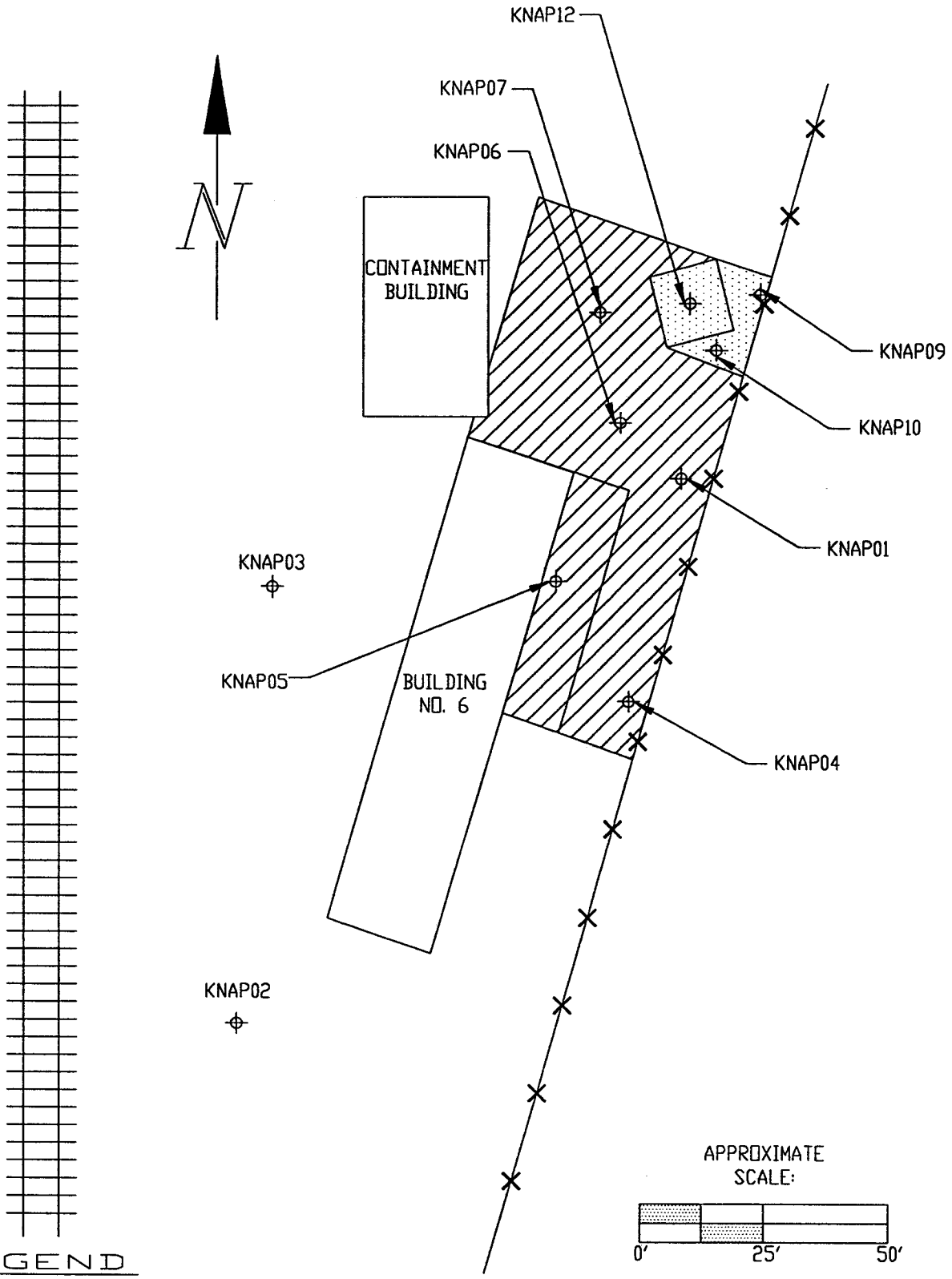
Currently, no containers of waste paint filters, over spray paper or incinerator ash are stored in the subject area. The last day of use for the waste paint filters and over spray paper storage unit was May 24, 1991. Hence, closing will consist only of sampling and analysis procedures to verify clean closure.

2.3 Sampling & Analysis Plan

In order to verify that contaminants have not been released to the ground surface from the storage and handling of absorbent material drums, a subsurface investigation will be conducted at the waste paint filters and over spray paper storage unit. The subsurface investigation will consist of collecting shallow (0-6") soil samples at the locations identified on Figure 3 and analyzing them for the constituents listed in the sample log (Table 1).

A stainless steel hand auger or trailer mounted drilling rig will be utilized to bore and collect samples. Discrete soil samples from the selected sampling locations will be collected from the base materials beneath the crushed rock layer at depths identified in Table 1. In the event deposited river sediments are encountered as a result of the flood of 1993, the soil collected will be from depths six inches below the deposited material. Two (2) background soil samples will also be collected from areas which do not exhibit obvious stains or other signs of possible surface contamination. Background soil constituent concentrations may be used as criteria for assessing the existence of soil contamination at the site.

Soil samples will be carefully removed from the sampling device using a stainless steel spoon and placed into an appropriate sampling jar. The samples will be collected by personnel in Level D protection utilizing clean latex or nitrile gloves. The personnel protection level will be upgraded if actual project conditions warrant a change.



LEGEND

FENCE/PROPERTY LINE

BRULE INCINERATOR UNIT AREA

WASTE PAINT FILTER AND OVERSPRAY PAPER STORAGE AREA

SAMPLE LOCATION

SAMPLE LOCATION DIAGRAM

KNAPHEIDE MANUFACTURING COMPANY

WEST QUINCY, MISSOURI

FIGURE 3

DATE: 5-3-94

DWG.# KNAP06-1

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ENVIRONMENTAL ENGINEERS

TABLE 1
SAMPLE LOG
WASTE PAINT FILTERS AND OVER SPRAY PAPER STORAGE UNIT

Sample ID No.	Matrix	Depth	Analysis*	Description
KNAP 01	Soil	0-6"	Total Metals	Surface Water Runoff Pathway Sample
KNAP 02	Soil	0-6"	Total Metals	Background Sample
KNAP 03	Soil	0-6"	Total Metals	Background Sample
KNAP 04	Soil	0-6"	Total Metals	Storage Unit Sample
KNAP 05	Soil	2'	Total Metals	Storage Unit Sample
KNAP 06	Soil	0-6"	Total Metals, VOA, BNA	Storage Unit Sample
KNAP 07	Soil	3-4"	TPH, VOA, BNA	Oily Layer Sample
KNAP 08	Soil	0-6"	Total Metals, VOA, BNA	Duplicate Soil Sample (KNAP 05)
KNAP 09	Water	---	VOA, BNA, TPH	Decontamination Blank

*Total Metals = SW 846 EPA Approved Method
VOA - Volatile Organic Analysis - SW 846 Method 8240
BNA - Base Natural Acids - SW 846 Method 8270
TPH - Total Petroleum Hydrocarbons SW 846 Method 418.1

The sample bottles will be labeled identifying the sample location, sample collector, date of collection and analysis to be performed. The samples will then be transported to an independent laboratory whose quality assurance and quality control (QA/QC) procedures will be in accordance with EPA SW 846 methods. A chain-of-custody form will accompany the samples to the laboratory.

In addition to the laboratory QA/QC procedures, one (1) duplicate soil sample and one (1) decontamination blank will also be collected and submitted for analysis. The results of the duplicate soil and decontamination blank sample analyses will be used in comparison with the soil sample analyses results, to assess the potential presence of contamination as a result of field sampling procedures or laboratory analyses. All analytical results will be submitted to EPA and MDNR within 30 days after receipt of the sampling data.

Drill rig equipment and augers used in the investigation will be decontaminated prior to use on the site and prior to removal from the site. In addition, sampling equipment will be decontaminated between each sample location. This procedure will eliminate the possibility of contamination being introduced from an off-site source and the possibility of contamination encountered from the investigation does not leave the site. Decontamination will be performed using fresh water from a potable water supply in combination with Alconox soap. Distilled water will be used as a final rinse. Decontamination fluids will be collected and placed in appropriately-labelled 55-gallon DOT approved drums.

Excess soil cuttings which can not be replaced back to the respective soil boring will also be collected and placed in appropriately labelled 55 gallon DOT approved drums.

2.4 Closure Criteria

The waste paint filters and over spray paper storage unit will be considered to be clean closed if the soil sample analyses results indicate no detection of the parameters above the practical quantitation limits identified in Table 2 or if the total constituents of concern in the soil samples are equal to or less than the background soil sample concentrations or as referenced in Missouri soil literature or a risk based standard. The certification report submitted will include a report with photographs detailing all work completed to accomplish closure. A copy of the professional engineer's inspection report and results of sampling and laboratory analysis will also be submitted with the closure certification.

If analytical results indicate that contamination exists in the soil at the waste paint filters and over spray paper storage unit, Knapheide will submit a contingent Closure Plan for the unit within 60 days of EPA's notification to Knapheide that EPA has determined that additional closure activities are required. The contingent closure plan will address provisions outlined in 10 CSR 25-7.265(2)(I)6. and 10 CSR 25-7.265(2)(G)4.

TABLE 2

ANALYTICAL DETECTION LIMITS

			Practical Quantitation Limit		
Analytical Suite	Parameters	Method	Soil	Water	Wipe
Metals	Arsenic	SW 846 7060	0.5 mg/kg	0.050 mg/L	0.050 $\mu g/cm^2$
	Barium	SW 846 6010	2.0 mg/kg	0.005 mg/L	0.005 $\mu g/cm^2$
	Cadmium	SW 846 7131	0.1 mg/kg	0.003 mg/L	0.003 $\mu g/cm^2$
	Chromium	SW 846 7191	0.5 mg/kg	0.005 mg/L	0.005 $\mu g/cm^2$
	Lead	SW 846 7421	0.15 mg/kg	0.050 mg/L	0.050 $\mu g/cm^2$
	Mercury	SW 846 7471	0.04 mg/kg	0.0002 mg/L	0.0002 $\mu g/cm^2$
	Selenium	SW 846 7740	0.25 mg/kg	0.100 mg/L	0.100 $\mu g/cm^2$
	Silver	SW 846 7761	0.5 mg/kg	0.010 mg/L	0.010 $\mu g/cm^2$
Volatiles	Chloromethane	SW 846 8240	10 µg/kg	10 µg/L	1,000 $\mu g/cm^2$
	Bromomethane	SW 846 8240	10 µg/kg	10 µg/L	1,000 $\mu g/cm^2$
	Vinyl Chloride	SW 846 8240	10 µg/kg	10 µg/L	1,000 $\mu g/cm^2$
	Chloroethane	SW 846 8240	10 µg/kg	10 µg/L	1,000 $\mu g/cm^2$
	Methylene Chloride	SW 846 8240	5 µg/kg	5 µg/L	1,000 $\mu g/cm^2$
	Acrolein	SW 846 8240	100 µg/kg	100 µg/L	1,000 $\mu g/cm^2$
	Acrylonitrile	SW 846 8240	100 µg/kg	100 µg/L	1,000 $\mu g/cm^2$
	Trichlorofluoromethane	SW 846 8240	10 µg/kg	10 µg/L	1,000 $\mu g/cm^2$
	Acetone	SW 846 8240	100 µg/kg	100 µg/L	1,000 $\mu g/cm^2$
	Carbon Disulfide	SW 846 8240	5 µg/kg	5 µg/L	1,000 $\mu g/cm^2$
	1,1-Dichloroethene	SW 846 8240	5 µg/kg	5 µg/L	1,000 $\mu g/cm^2$
	1,1-Dichloroethane	SW 846 8240	5 µg/kg	5 µg/L	1,000 $\mu g/cm^2$
	1,2-Dichloroethene (Total)	SW 846 8240	5 µg/kg	5 µg/L	1,000 $\mu g/cm^2$
	Chloroform	SW 846 8240	5 µg/kg	5 µg/L	1,000 $\mu g/cm^2$
	1,2-Dichloroethane	SW 846 8240	5 µg/kg	5 µg/L	1,000 $\mu g/cm^2$
	2-Butanone	SW 846 8240	100 µg/kg	100 µg/L	1,000 $\mu g/cm^2$
	1,1,1-Trichloroethane	SW 846 8240	5 µg/kg	5 µg/L	1,000 $\mu g/cm^2$
	Carbon Tetrachloride	SW 846 8240	5 µg/kg	5 µg/L	1,000 $\mu g/cm^2$
	Vinyl Acetate	SW 846 8240	50 µg/kg	50 µg/L	1,000 $\mu g/cm^2$
	Bromodichloromethane	SW 846 8240	5 µg/kg	5 µg/L	1,000 $\mu g/cm^2$
	1,2-Dichloropropane	SW 846 8240	5 µg/kg	5 µg/L	1,000 $\mu g/cm^2$
	cis-1,3-Dichloropropene	SW 846 8240	5 µg/kg	5 µg/L	1,000 $\mu g/cm^2$
	Trichloroethene	SW 846 8240	5 µg/kg	5 µg/L	1,000 $\mu g/cm^2$
	Dibromochloromethane	SW 846 8240	5 µg/kg	5 µg/L	1,000 $\mu g/cm^2$
	1,1,2-Trichloroethane	SW 846 8240	5 µg/kg	5 µg/L	1,000 $\mu g/cm^2$
	Benzene	SW 846 8240	5 µg/kg	5 µg/L	1,000 $\mu g/cm^2$
	trans-1,3-Dichloropropene	SW 846 8240	5 µg/kg	5 µg/L	1,000 $\mu g/cm^2$
	Bromoform	SW 846 8240	5 µg/kg	5 µg/L	1,000 $\mu g/cm^2$
	4-Methyl-2-Pentanone	SW 846 8240	5 µg/kg	50 µg/L	1,000 $\mu g/cm^2$
	2-Hexanone	SW 846 8240	50 µg/kg	50 µg/L	1,000 $\mu g/cm^2$
	Tetrachloroethene	SW 846 8240	5 µg/kg	5 µg/L	1,000 $\mu g/cm^2$
	1,1,2,2-Tetrachloroethane	SW 846 8240	5 µg/kg	5 µg/L	1,000 $\mu g/cm^2$
	Toluene	SW 846 8240	5 µg/kg	5 µg/L	1,000 $\mu g/cm^2$
	Chlorobenzene	SW 846 8240	5 µg/kg	5 µg/L	1,000 $\mu g/cm^2$
	Ethylbenzene	SW 846 8240	5 µg/kg	5 µg/L	1,000 $\mu g/cm^2$
	Styrene	SW 846 8240	5 µg/kg	5 µg/L	1,000 $\mu g/cm^2$
	Xylene (Total)	SW 846 8240	5 µg/kg	5 µg/L	1,000 $\mu g/cm^2$

TABLE 2
ANALYTICAL DETECTION LIMITS (continued)

			Practical Quantitation Limit		
Analytical Suite	Parameters	Method	Soil	Water	Wipe
Base Neutral Acids	Pyridine	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	N-Nitrosodimethylamine	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	Phenol	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	bis(2-chloroethyl)Ether	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	2-Chlorophenol	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	1,3-Dichlorobenzene	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	1,4-Dichlorobenzene	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	Benzyl Alcohol	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	1,2-Dichlorobenzene	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	o-Cresol	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	bis-(2-Chloro2propyl)Ether	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	m & p-Cresol	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	N-Nitroso-Di-n-propoylamine	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	Hexachloroethane	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	Nitrobenzene	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	Isophorone	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	2-Nitrophenol	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	2,4-Dimethylphenol	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	Benzoic Acid	SW 846 8270	1,700 µg/kg	50 µg/L	50 µg/cm^2
	bis(2-Chloroethoxy)methane	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	2,4-Dichlorophenol	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	1,2,4-Trichlorobenzene	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	Naphthalene	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	4-Chloroaniline	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	Hexachlorobutadiene	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	4-Chloro-3-methylphenol	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	2-Methylnaphthalene	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	Hexachlorocyclopentadiene	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	2,4,6-Trichlorophenol	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	2,4,5-Trichlorophenol	SW 846 8270	1,700 µg/kg	50 µg/L	50 µg/cm^2
	2-Chloronaphthalene	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	2-Nitroaniline	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	Dimethylphthalate	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	Azobenzene	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	Acenaphthylene	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	2,6-Dinitrotoluene	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	3-Nitroaniline	SW 846 8270	1,700 µg/kg	10 µg/L	10 µg/cm^2
	Acenaphthene	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	2,4-Dinitrophenol	SW 846 8270	1,700 µg/kg	50 µg/L	50 µg/cm^2
	4-Nitrophenol	SW 846 8270	1,700 µg/kg	50 µg/L	50 µg/cm^2
	Dibenzofuran	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	2,4-Dinitrotoluene	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	Diethylphthalate	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	4-Chlorophenol phenyl ether	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	Fluorene	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	4-Nitroaniline	SW 846 8270	1,700 µg/kg	50 µg/L	50 µg/cm^2
	4,6-Dinitro-2-methylphenol	SW 846 8270	1,700 µg/kg	50 µg/L	50 µg/cm^2
	N-Nitrosodiphenylamine	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	4-Bromophenyl phenyl ether	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	Hexachlorobenzene	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	Pentachlorophenol	SW 846 8270	1,700 µg/kg	50 µg/L	50 µg/cm^2
	Phenanthrene	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	Anthracene	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	Carbazole	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	Di-n-butylphthalate	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	Fluoranthene	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	Benzidine	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	Pyrene	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	Butylbenzylphthalate	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	3,3'-Dichlorobenzidine	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	Benzo(a)anthracene	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	Chyrsene	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	bis-(2-Ethylhexyl)phthalate	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	Di-n-octylphthalate	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	Benzo(b)fluoranthene	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	Benzo(k)fluoranthene	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	Benzo(a)pyrene	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	Indeno(1,2,3-cd)pyrene	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	Dibenzo (a,h)anthracene	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
	Benzo(g,h,i)perylene	SW 846 8270	330 µg/kg	10 µg/L	10 µg/cm^2
Total Petroleum Hydrocarbons		SW 846 418.1	10 mg/kg	10 mg/L	10 mg/cm^2

3.0 BRULE INCINERATOR UNIT

Currently the inoperative Brule incinerator is located at the northeast edge of the waste paint filters and over spray paper storage unit area as shown in Figure 2. The Brule incinerator unit consists of a Brule incinerator located upon an approximately 15 x 15 foot square concrete pad. The areal definition of the Brule incinerator unit is taken as the extent of the incinerator's concrete foundation pad including an area approximately 65 feet to the northeast of the Brule incinerator unit, as well as the surface water runoff pathway which extends from the concrete foundation pad towards the east to the property line.

Between 1980 and the incinerator's last day of use, September 25, 1989, used absorbent material was burned in the Brule incinerator. Incineration activities consisted of placing used absorbent material, which had been transported from the waste paint filters and over spray paper storage unit, into the Brule incinerator and subsequently removing incinerator ash and placing it in sealed 55-gallon metal containers for storage at the waste paint filters and over spray paper storage unit. Ash generated by incineration activities from 1980 until September 25, 1989 was collected and stored at the storage unit, and was subsequently totally removed on May 24, 1991.

As noted above, from 1980 until September 25, 1989, containers of used absorbent material were incinerated on-site within a small Brule incinerator. According to the manufacturer, the Brule incinerator would achieve approximately 95 percent efficiency in reducing the volume of burned material. Based upon an annual generation (prior to 1989), and subsequent incineration of 12,000 waste paint filters, approximately five to ten 55-gallon containers of ash would be generated per year. The incinerator was operated under an air permit issued by MDNR under MDNR Waste Management Program Policy #202 (see Appendix B for design information and specifications of the Brule incinerator).

3.1 Closure Procedures

Proposed closure procedures for the unit as well as the concrete pad include dismantling the unit, collecting wipe samples of the incinerator, refractory brick, and of the concrete pad, and disposing of the incinerator and its associated concrete pad at an approved waste management facility. Based on results of the wipe sample laboratory analyses, it is anticipated that the incinerator unit and the concrete pad will meet the criteria for clean closure as presented in this section and will be considered a solid waste.

Wipe samples will be collected using standard methods which specify uniform sample areas, effective absorbent materials as well as moistening agents. For each analysis (Table 3), an appropriate solvent or distilled water will be applied to moisten a gauze pad or filter paper. This moistened absorbent will be used to thoroughly swab a 100 centimeter square area as measured by a sampling template. Clean templates will be used for each sample location. Following sample collection, the wipe samples will be stored in precleaned glass jars at 4°C.

TABLE 3
SAMPLE LOG
FOR BRULE INCINERATOR UNIT

Sample ID No.	Matrix	Depth	Analysis	Description
BRULE 01	Wipe	Surface	Total Metal, VOA, BNA	Refractory Brick
BRULE 02	Wipe	Surface	Total Metals, VOA, BNA	Metal Stack
BRULE 03	Wipe	Surface	Total Metals, VOA, BNA	Concrete Pad

A total of three (3) wipe samples will be collected. Two will be from locations within the incinerator, the refractory brick and the metal surface of the stack, and one will be of the concrete pad surface. The Brule incinerator unit and the concrete pad will be disposed as special waste in a solid waste landfill if analytical results give indication that there are no constituents above the practical quantitation limits (Table 2) or that there are no concentrations above those normally found in refractory brick, portland cement or concrete. Existing guidance materials will be used for comparisons.

Upon confirmation of clean closure, the dismantled incinerator and its associated concrete pad will be loaded into roll-off boxes for transport to the designated solid waste facility. Remaining dust or ash if encountered, will be separately contained and disposed in a hazardous waste disposal facility. In the event the laboratory analyses results for the incinerator unit and concrete pad are above the practical quantitation limits (Table 2), or the guidance criteria for refractory brick, portland cement or concrete, the materials will be appropriately labeled, manifested and transported to a hazardous waste landfill.

3.2 Sampling & Analysis Plan

In order to verify that contaminants have not been released to the ground surface from the incineration of waste paint filters, over spray paper or incinerator ash, a subsurface investigation will be conducted at the Brule incinerator unit. This subsurface investigation will consist of collecting shallow (0-6") soil samples at the locations depicted on Figure 3 and analyzing them for the constituents listed in Table 4.

TABLE 4
SAMPLE LOG
FOR BRULE INCINERATOR UNIT AREA

Sample ID No.	Matrix	Depth	Analysis	Description
KNAP 10	Soil	0-6"	Total Metals, VOA, BNA	Material transport pathway sample
KNAP 11	Soil	0-6"	Total Metals	Surface water runoff pathway sample
KNAP 12	Soil	0-6"	Total Metals	Sample underneath concrete pad

A stainless steel hand auger or trailer mounted drilling rig will be utilized to collect soil samples. Discrete soil samples from the selected sampling locations will be collected from the base material beneath the crushed rock layer or immediately beneath the concrete pad. In the event deposited river sediments are encountered as a result of the flood of 1993, the soil collected will be from depths six inches below the deposited material. The background soil constituent concentrations (Table 1) will be used as criteria for assessing the existence of soil contamination at the site.

Soil samples will be carefully removed from the sampling device using a stainless steel spoon and placed into an appropriate sampling jar. The samples will be collected by personnel in Level D protection utilizing clean latex or nitrile gloves. The personnel protection level will be upgraded if actual project conditions warrant a change.

The sample bottles will be labeled identifying the sample location, sample collector, date of collection and analysis to be performed. The samples will then be transported to an independent laboratory whose QA/QC procedures will be in accordance with EPA SW 846 methods. A chain-of-custody form will accompany the samples to the laboratory. The QA/QC procedures outlined in Section 2.3 for assessing laboratory and field contamination of samples applies for the Brule incinerator unit areas as well.

All drill rig equipment and augers used in the investigation will be decontaminated prior to use on the site and prior to removal from the site. In addition, all sampling equipment will be decontaminated between each sample location. This procedure will eliminate the possibility of contamination being introduced from an off-site source and the possibility of contamination encountered from the investigation does not leave the site. Decontamination will be performed using fresh water from a potable water supply in combination with Alconox soap. Distilled water will be used as a final rinse. All decontamination fluids will be collected and placed in appropriately labeled 55-gallon DOT approved drums.

Excess soil cuttings which can not be replaced back to the respective soil boring will also be collected and placed in appropriately labeled 55-gallon DOT approved drums.

3.3 Closure Criteria

The Brule incinerator unit will be considered to be clean closed when the Brule incinerator is properly disposed and the soil sample analysis results indicate no detection of the parameters above the practical quantitation limits identified in Table 2 or if the total constituents of concern in the soil samples are equal to or less than the background soil sample concentrations or as referenced in Missouri soil literature or a risk based standard. The closure certification submitted to MDNR will include a report with photographs detailing all work completed to accomplish closure. A copy of the professional engineer's inspection report and results of sampling and laboratory analyses will also be submitted with the closure certification.

If analytical results indicate that contamination exists in the soil at the Brule incinerator unit, Knapheide will submit a contingent Closure Plan for the unit. The contingent closure plan will address provisions outlined in 10 CSR 25-7.265(2)(I)6. and 10 CSR 25-7.265(2)(G)4.

4.0 CLOSURE SCHEDULE

The expected time schedule for the closure activities are as follows:

Activity	Time for Activity	No. of Days from the Receipt of Approval of Plan
1. Mobilization	15 days	15 days
2. Incinerator Characterization Performance of Subsurface Investigation	5 days	20 days
3. Procure Sample Analytical Results	15 days	35 days
4. Incinerator Approval from Waste Disposal Facility	45 day	80 days
5. Dismantling and Disposal of Incinerator and Concrete Pad	10 days	90 days
6. Certification of Closure	30 days	130 days

Total estimated time for closure is approximately 130 days from the receipt of Closure Plan approval. If additional sampling is necessary, the time required for closure will be extended. If the closure activities will take longer than 180 days to complete, Knapheide will request an extension from the Regional Administrator 30 days prior to the 180 day period.

5.0 CLOSURE COST ESTIMATE

Incinerator Characterization and Performance of Subsurface Investigations	$ 4,000.00
Incinerator and Concrete Pad Disposal	$ 6,000.00
Sample Analyses	$ 9,000.00
Certification of Closure	$ 6,000.00
Total:	$25,000.00

APPENDIX A
ABSORBENT MATERIAL ANALYTICAL RESULTS

SCI ENVIRONMENTAL, INC. LABORATORY SERVICES DIVISION

March 12, 1991

Mr. Harold Huggins
Knapheide Manufacturing Company
436 South Sixth Street, P.O. Box C-140
Quincy, Illinois 62301

RE: Analytical Results
SCIE No. 91-1034

Dear Mr. Huggins:

SCI Environmental, Inc. (SCIE) is pleased to submit results of analytical testing performed on the samples submitted on February 18, 1991. The samples were analyzed for TCLP; EPA Method 1311 and ignitability. There were no analytical problems encountered with the analysis.

If you have any questions or need further clarification, please do not hesitate to call.

Thank you for selecting SCI Environmental for you analytical testing needs.

Respectfully submitted,

Elizabeth M. Cohoon

Elizabeth M. Cohoon
Laboratory Manager

EMC/jr/031291-2.ltr

Enclosure

Sample Number	Sample Identity	Ignitability (degrees F)
4310	Composite	> 200

Submitted By:

3/12/91
Date

Elizabeth M. Cohoon
Elizabeth M. Cohoon
Laboratory Manager

File:1034TCLP.dta

SCI ENVIRONMENTAL, INC. LABORATORY SERVICES DIVISION

DATA SUMMARY

Client: Knapheide Manufacturing Company
436 South Sixth Street, P.O. Box C-140
Quincy, Illinois 62301

Project No.: 91-1034

Sample Matrix: Filters

Date Sampled: 2/14/91
Date Received: 2/18/91
Date Analyzed: 3/4/91
EPA Method No.: 1311

Sampled By: SCIE
Sample Location: Knapheide

TOXICITY CHARACTERISTIC LEACHATE PROCEDURE (TCLP)

SCIE Sample No.: 4310

Sample Identity: Paint Composite

Contaminant	Results (ppm)*	Regulatory Level (ppm)*
Arsenic	ND(**) < 0.1	5.0
Barium	0.19	100.0
Benzene	ND < 0.1	0.5
Cadmium	ND < 0.1	1.0
Carbon tetrachloride	ND < 0.01	0.5
Chlorobenzene	ND < 0.1	100.0
Chloroform	ND < 0.1	6.0
Chromium	6.25	5.0
o-Cresol	ND < 10.0	200
m+p-Cresol	ND < 10.0	200
1,4-Dichlorobenzene	ND < 0.5	7.5
1,2-Dichloroethane	ND < 0.1	0.5
1,1-Dichloroethylene	ND < 0.1	0.7
2,4-Dinitrotoluene	ND < 0.1	0.13
Hexachlorobenzene	ND < 0.1	0.13
Hexachlorobutadiene	ND < 0.1	0.5
Hexachloroethane	ND < 0.1	3.0
Lead	ND < 0.1	5.0
Mercury	ND < 0.001	0.2
Methyl ethyl ketone	9.4	200.0
Nitrobenzene	ND < 0.5	2.0
Pentachlorophenol	ND < 10.0	100.0
Pyridine	ND < 2.0	5.0
Selenium	ND < 0.1	1.0
Silver	ND < 0.05	5.0
Tetrachloroethylene	ND < 0.1	0.7
Trichlorehthylene	ND < 0.1	0.5
2,4,5-Trichlorophenol	ND < 10.0	400.0
2,4,6-Trichlorophenol	ND < 1.0	2.0
Vinyl Chloride	ND < 0.1	0.2

* ppm = parts per million
**ND = none detected above method detection limit

APPENDIX B
BRULE INCINERATOR SPECIFICATIONS

APPLICATION FOR PERMIT TO INSTALL OR MODIFY AN INCINERATOR

☑ New Incinerator ☐ Modification of Existing Incinerator Date 12-6-99

1. Name of installation	2. Address	3. Telephone
THE KNAPHEIDE MFG CO.	436 S. 6TH ST.	(217) 222-7131
4. Owner of installation	5. Address	6. Telephone
SAME		

INCINERATOR IDENTIFICATION DESCRIPTION AND SPECIFICATIONS

7. Make	8. Model	9. Serial Number	10. Type
BRULE'	EG4-T5	—	☑ retort ☐ in line ☐ other
11. Rated capacity	**12. Type waste**	**13. Waste heat content**	**14. Approximate firing rate**
315 lb/hr	"0" (FILTERS)	8500 BTU/lb	900 lb/day
15. Refractory	**16. Pyrometric cone equivalent**	**17. Pyrometric test results**	
☑ Firebrick ☐ Castable ☐ Other	31	☐ on file ☑ attached	
18. ASME PTC 27 test results	**19. Engineering plans and specifications**	**20. City building permit**	
☐ on file ☐ attached	☐ on file ☑ attached	No. APPLIED for date	

DESIGN INFORMATION

21. Overfire air	22. Underfire air	23. Excess air
70 % 270 cu. ft./min	30 % 117 cu. ft./min	100 %
24. Primary chamber volume	**25. Primary chamber burner**	**26. Grate area**
52 cu. ft.	300,000 BTU/hr.	11.6 sq. ft.
27. Secondary chamber volume	**28. Secondary chamber burner**	**29. Secondary chamber temperature**
37.5 cu. ft.	450,000 BTU/hr.	min 1400 °F max °F
30. Tertiary chamber volume	**31. Tertiary chamber burner**	**32. Tertiary Chamber temperature**
N/A cu. ft.	N/A BTU/hr.	N/A min °F max °F

33. Stack height	34. Stack exit temperature	35. Stack lining	36. Charging door
25'-0" ft. above ground	1400 °F °R	☐ Unlined ☑ Fire Brick ☐ Castable	☑ Guillotine ☐ Double Guillotine ☐ Sliding
37. Stack diameter or area	**38. Stack exit velocity**	**39. Damper**	**40. Grain loading (dry basis)**
15" ID in. sq. ft.	39 ft/sec	☐ guillotine ☑ barometric ☐ both	N/A gr/SCF @ 12% CO

41. Installing company	42. Local representative	43. Person making application (Signature)
KOENKER PLUMBING	403 HAMPSHIRE 222-2964	
Address Telephone	Address Telephone	Title Telephone

General:

Describe general matter of material to be burned. PAINT BOOTH FILTERS AND FLOOR PAPER

Operation:

Incinerator to operate: 7 hours per day, 3 days per week, 49 weeks per year.

Application Instructions General

6. Permit application reason:

New construction	1 ✓
Alteration	2
Change of location	3
Change of ownership	4

7. Type of organization:

Corporation	1 ✓
Partnership	2
Individual owner	3
Gov't Agency	4

8. Estimated cost of equipment or alteration:

Air pollution control equipment $ 17,000

Basic equipment $ 4,000

9. For the new construction, alteration, transfer of ownership or location.

What is the: Estimated starting date Dec. 27, 1979
Estimated completion date 2 wks. AFTER DELIVERY OF INCINERATOR ~~(est. to whom) ESTIMATE~~ 2-29-80

10. General nature of business:

MANUFACTURE TRUCK EQUIPMENT

11. _____
Signature of responsible member of organization

12. William L. Cizek
Typed or printed name of signer

13. DIRECTOR OF PERSONNEL
Official title of signer

14. 12-6-79
Date

15. (217) 222-7131
Phone number